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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,058	12/03/2003	Yaw S. Obeng	SILO-0011D1	5013
27964	7590	07/07/2004	EXAMINER	
HITT GAINES P.C. P.O. BOX 832570 RICHARDSON, TX 75083			THOMAS, DAVID B	
			ART UNIT	PAPER NUMBER
			3723	

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,058

Applicant(s)

OBENG, YAW S.

Examiner

David B. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/6/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fisher, Jr. et al. (6,186,864 and 6,045,434).

Fisher, Jr. et al. ('864 and '434) disclose a system for measuring surface properties of a polishing pad, the system having a polishing pad; an ultrasonic probe located over the polishing surface and configured to both transmit an ultrasonic signal to the polishing surface and receive a modified signal from the polishing surface without contacting the polishing surface, and a subsystem coupled to the ultrasonic probe and configured to determine a surface property of the polishing pad from the reflectance spectrum, the ultrasonic probe comprising a single ultrasonic transducer, or a first and second transducer, one for transmitting, one for receiving, and the surface property is surface texture (i.e. changes in the thickness of the pad).

3. Claims 1-3, and 10 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Elledge (2004/0043521 A1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elledge (2004/0043521 A1), as applied to claims 1-3, and 10 above.

Elledge (2004/0043521 A1) discloses the system for measuring surface properties of a polishing pad, as claimed, except for specifying a particular range for either the frequency of the ultrasonic signal or the air gap between the probe and the polishing surface. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have experimented with various frequencies and heights above the polishing surface, without undue burden, to arrive at optimum values for each parameter, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

6. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elledge (2004/0043521 A1), as applied to claims 1-3 and 10 above, in view of Ono et al (2004/0055223 A1).

Elledge (2004/0043521 A1) discloses the claimed invention except for a polishing pad having the specific characteristics as presently claimed. Elledge (2004/0043521 A1), however, teaches that the Polishing pad 104 may be a conventional polishing pad

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made from a relatively soft, thin, and porous material, such as polyurethane. Polishing pad 104 may also be an abrasive polishing pad with abrasive particles fixedly bonded to a suspension medium. CMP apparatus 100 may also have an underpad 109 attached to the surface of platen 102 for supporting polishing pad 104 (paragraph [0032]). Ono et al. (2004/0055223 A1) teach the manufacture of polishing pads that have the characteristics of the polishing pad as presently claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the system of Elledge (2004/0043521 A1) by providing a particular polishing pad to the system, such as suggested by Ono et al. (2004/0055223 A1), wherein the choice of a particular polishing pad would have been obvious based upon the effect that a particular polishing pad has on a particular substrate to be polished, e.g. semiconductor wafers containing aluminum, copper, tantalum, etc. each of which having particular polishing characteristics.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Engel discloses a system that detects properties of the surface of the workpiece on the baseplate of a machine by means of overhead ultrasonic and infrared (IR) sensors. The measured values are converted by a central unit into a measurement code for comparison with the codes stored in a memory. Shimagaki et al. disclose a polishing pad.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Thomas whose telephone number is (703) 308-4250. The examiner can normally be reached on 7-4 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David B Thomas can be reached on (703) 308-4250. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


dbt


David B. Thomas
Patent Examiner
Art Unit 3723